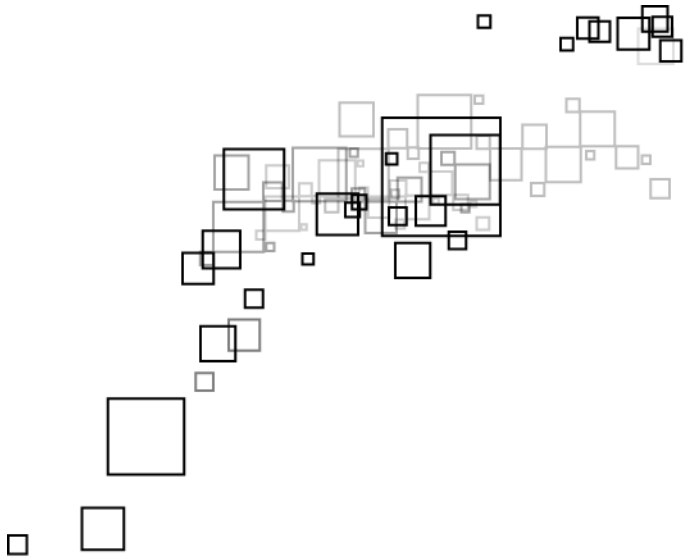

User Manual

500Mbps HomePlugAV Smartlink

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About the Product

HomePlugAV Smarlink is ready to use out of the box and does not require the installation of driver software to work. It can be connected to computers, routers, gaming consoles, hubs, IPTV set-top boxes, and other Ethernet devices regardless of operating system.

How Does It Work?

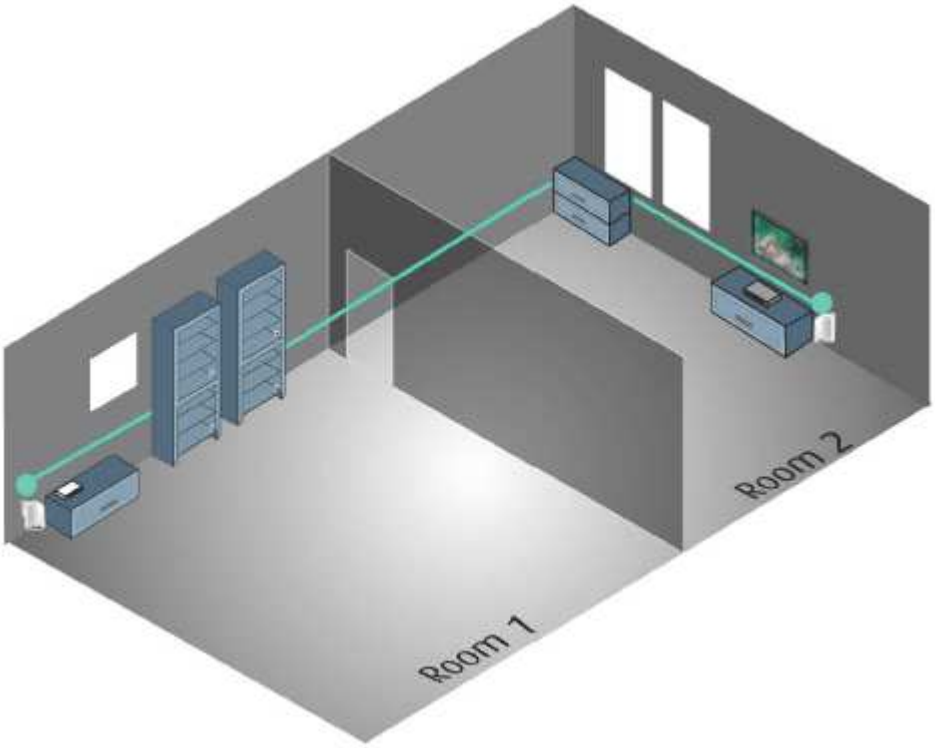
HomePlugAV Smartlink utilizes the existing electrical wiring in the house as a path to create a secured network of computers and Ethernet devices. With a maximum data rate of up to 200 Mbps, HomePlugAV Smartlink can reliably handle high requirement applications like broadband Internet, high definition video streaming, and Voice over IP.

HomePlugAV Smartlink converts digital signals to a complex analog signal that traverses along the electrical wires. When receiving the analog signal, HomePlugAV Smartlink converts the analog signal back to digital. To make the signal secured, a 128-bit AES encryption is applied.

A HomePlugAV Smartlink device can only communicate with other HomePlugAV Smartlink devices that use the same Private Network Name. The Private Network Name can be changed manually using the HomePlugAV Smartlink Utility software on a computer with a Windows operating system. When you use the software, you have to manually type the Private Network Name for the device. Another way to change the Private Network Name is to use the Simple Connect button. Simple Connect automatically creates an encrypted Private Network Name. It can also be used to reset the Private Network Name or to add a device into an existing HomePlugAV Smartlink network.

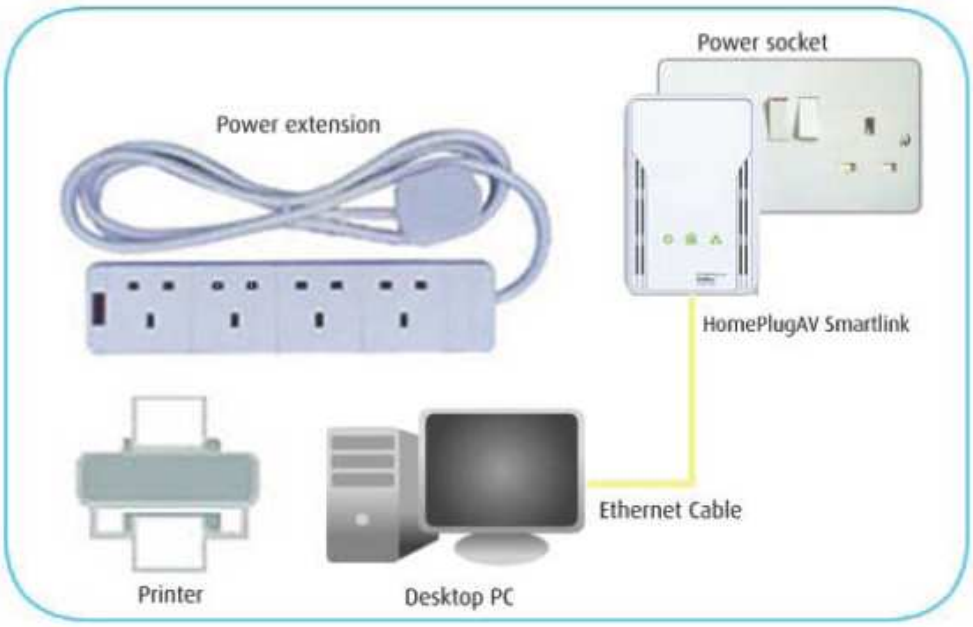
Note: HomePlugAV Smartlink devices from the Twin Pack are already configured to use a common Private Network Name unique for that pair and are ready to use. The HomePlugAV Smartlink from a Single Pack, on the other hand, uses a random Private Network Name. You still need to change its Private Network Name to allow it to communicate with an existing HomePlugAV Smartlink network.

When a HomePlugAV Smarlink communicates with another device, the Powerline Activity LED color will give you an idea about the connection rate: Red means below 30 Mbps; Amber means 30 to 80 Mbps; and Green means more than 80 Mbps.



Direct Connection

For best performance, connect HomePlugAV Smartlink directly to a wall outlet. Avoid connecting it to a power strip where other electrical devices are connected. Other devices create electrical noise that may affect the performance of HomePlugAV Smartlink.



Package Contents

The package contains the following items:

- 1 HomePlugAV Smartlink for Single Pack or 2 HomePlugAV Smartlink for Twin Pack
- 1 Ethernet cable for Single Pack or 2 Ethernet cables for Twin Pack
- Resource CD that contains the HomePlugAV Smartlink Utility installer and the User Manual.
- Easy Start Guide

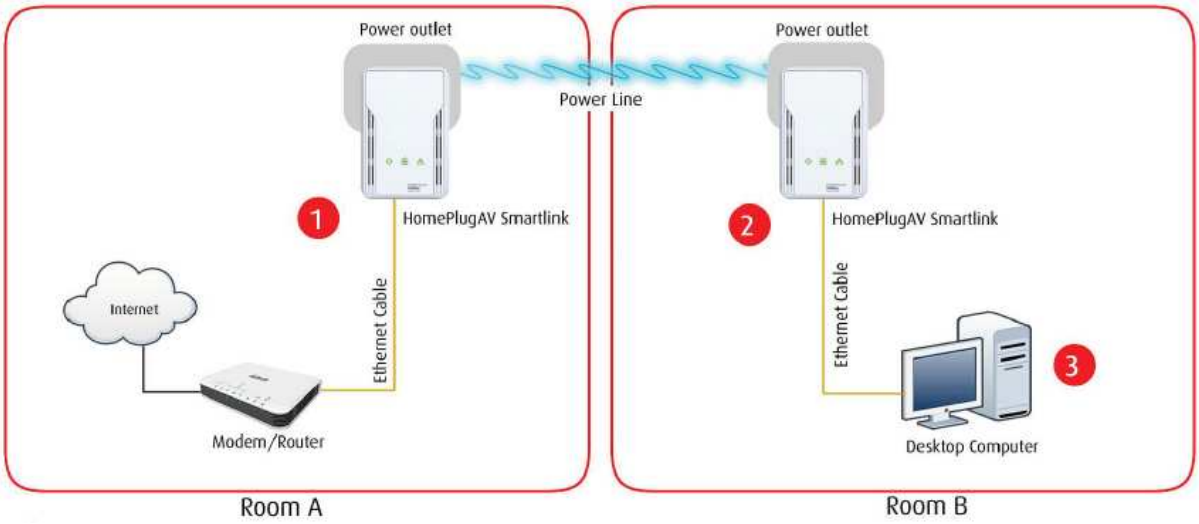
Device Design

	Label	Status	Description/ Function
A	**Power**	Blinking slowly	When LED is blinking slowly in Green color HomePlugAV Smartlink is on a Power Saving status.
		Off	No power.
		On	• After Simple Connect is pressed for two seconds, this LED will blink to confirm the button press. • When Simple Connect is pressed for 10 seconds, this LED will blink to confirm the Private Network Name reset.
B	**Powerline Activity**	Off	Device is not connected to a HomePlugAV Smartlink network.
		On	• This LED remains on when the device is part of a HomePlugAV Smartlink network. • The LED colors represents the connection rate within the HomePlugAV Smartlink network whether it is good (red), better (amber), or best (green). • The LED flashes to indicate network activity.
C	**Ethernet Activity**	Off	An Ethernet device is not connected.
		On	• An Ethernet device is connected. • The LED flashes to indicate Ethernet activity.
D	**Simple Connect Button**		Press to create or join a HomePlugAV Smartlink network. It can also be used to reset the Private Network Name to a random key.
E	**Ethernet Port**		Accepts either cross or straight Ethernet cable.
F	**Reset Button**		Press for 2 seconds to reset to the factory default settings. When you reset to the factory default, all your configuration changes will be removed.

Pairing the Device

Your HomePlugAV Smartlink devices by default are preconfigured to have a common Private Network Name. Setting up your HomePlugAV network is as easy as 1,2 and 3.

1. Plug in your HomePlugAV Smartlink devices side by side to easily observe the LED behavior. Wait until the Power and PL-ACT LED turns ON to confirm that the connection has been established.



2. In Location A plug in your HomePlugAV Smartlink into the wall socket then connect it to your Modem/Router's Ethernet LAN port using an Ethernet cable.

3. In Location B plug in your HomePlugAV Smartlink into the wall socket then connect it to your computer's Ethernet Port using an Ethernet cable. Your HomePlugAV Smartlink is now ready for use.

How to Use Simple Connect

Simple Connect provides a more convenient way of creating your HomePlugAV Smartlink network without the need to open the HomePlugAV Smartlink Utility software from a computer. The button has three main functions which include:

- Resetting the Private Network Name
- Creating a Secured HomePlugAV Smartlink Network
- Joining an existing Secured HomePlugAV Smartlink Network

Resetting the Private Network Name

Simple Connect allows you to reset the HomePlugAV Smartlink's Private Network Name to a random key. When a HomePlugAV Smartlink is reset to a random key, it will not be able to communicate with any other device.

Note: Resetting the Private Network Name is different from resetting the device to its factory default settings. If you intend to reset the device to its factory default settings, press RESET on the device.

To reset the Private Network Name using Simple Connect:

Step 1

Press Simple Connect button for 10 seconds or wait until ALL LED blinks. The Powerline Activity LED will switch OFF on both units.

Step 2

Do the same procedure on unit 2 to reset its Private Network Name. Press the Simple Connect button for 2 seconds on both units to pair the devices.

Creating a Secured HomePlugAV Smartlink Network

To create a HomePlugAV Smartlink network, you need at least two HomePlugAV Smartlink devices using random Private Network Names. When you press Simple Connect for 10 seconds on both devices, a common Private Network Name will be automatically generated to enable them to communicate with each other.

Note: New HomePlugAV Smartlink can already communicate with each other out of the box. However, if you intend to create a new Private Network Name using Simple Connect for both devices, you need to reset their Private Network Names to a random key before proceeding.

To create a Secured HomePlugAV Smartlink network using Simple Connect:

Step 1

Plug your HomePlugAV Smartlinks side by side where you can easily observe the LED behavior.

Upon connection, the LEDs will blink simultaneously and then the Power LED lights on steadily.

Press the Simple Connect button of the HomePlugAV Smartlink X for ten seconds. All LED will blink indicating that the Private Network Name has been randomize.

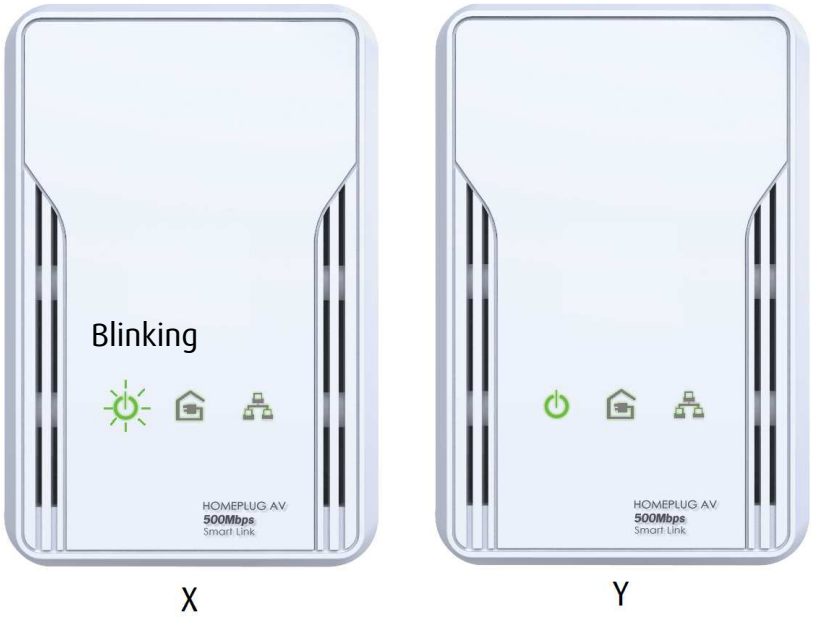
Press the Simple Connect button of the HomePlugAV Smartlink Y for ten seconds. All LED will blink indicating that the Private Network Name has been randomize.

X Y

Step 2

Press Simple Connect for two seconds on HomePlug X. After you release the button, the Power LED ⏻ will blink. If the Power LED ⏻ did not blink, press Simple Connect again for two seconds.

Note: Do not press Simple Connect for more than 2 seconds.



X Y

Step 3

Press Simple Connect for two seconds on HomePlug Y. After you release the button, the Power LED ⏻ will blink. If the Power LED ⏻ did not blink, press Simple Connect again for two seconds.

Make sure to press Simple Connect on HomePlug Y within two minutes after you press Simple Connect on HomePlug X.

The LEDs on both devices will switch off and on twice to signify that they are paired with another device.

Note: Do not press Simple Connect for more than 2 seconds

X Y

Step 4

To confirm if the connection was established, check the LEDs. The Power LEDs ⏻ and the Powerline Activity LEDs ⌂ on both HomePlugs are ON.

Network XY

When the Powerline Activity LED ⌂ on either HomePlug X or HomePlug Y is off, this means the pairing is not successful. In this case, you need to redo the entire process again.

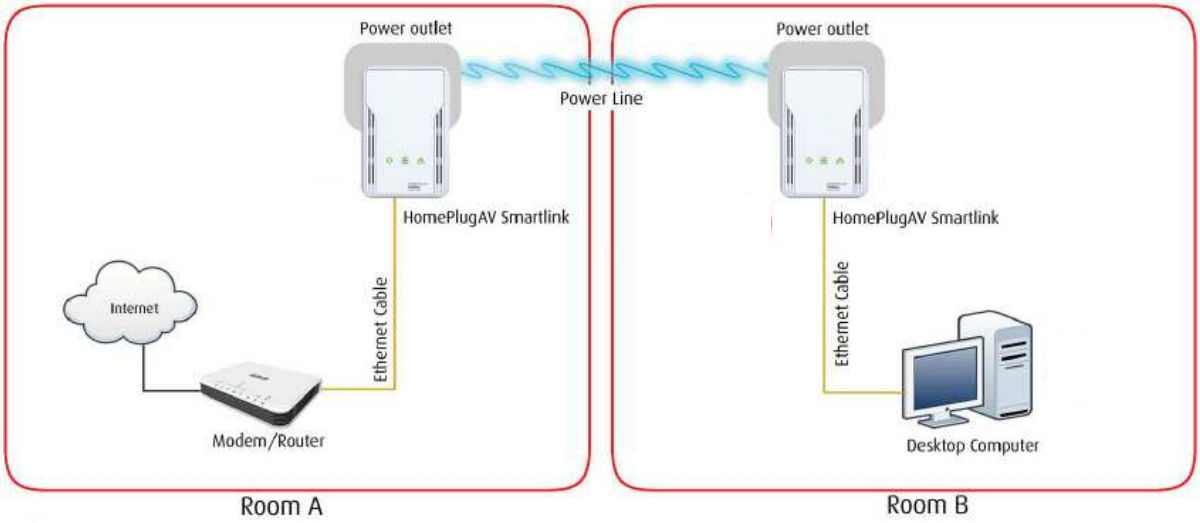
X Y

Step 5

Unplug the HomePlugAV Smartlinks and then connect them to your Ethernet devices using the Ethernet cables from the product package. After connecting the Ethernet cable, plug the HomePlugs directly to a wall outlet.

An Ethernet-enabled device can be a router, computer, hub, gaming console, IP phone, network printer, or IP TV set-top box.

Note: HomePlugAV Smartlinks work best when connected directly to a wall socket. Avoid plugging it to a power strip or power extension. Other electrical devices in the power strip produce electrical noise that may affect the performance of the HomePlug.



Joining an Existing Secured HomePlugAV Smartlink Network

To enable a new device to join an existing network, Simple Connect will copy the Private Network Name of the existing network to the new HomePlugAV Smartlink. If you pressed Simple Connect from multiple HomePlugAV Smartlinks, only the signal from the first two devices will be processed.

To join an existing Secured HomePlugAV Smartlink network using Simple Connect:

Step 1

Plug HomePlugAV Smartlink Z beside one of your existing HomePlugAV Smartlink device. Make sure you can easily observe the LED behavior.

Upon connection, HomePlug Z's LEDs will blink simultaneously and then the Power LED lights ON steadily. Ethernet LED will be ON if there is an ethernet link.

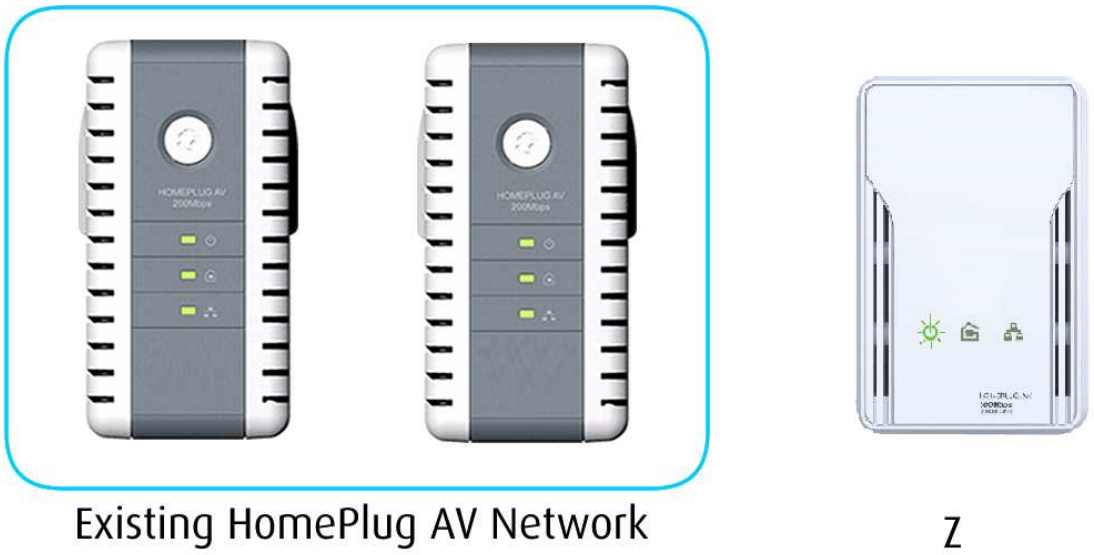
Existing HomePlug AV Network

Z

Step 2

Press Simple Connect for ten seconds from a HomePlugAV Smartlink Z. After you release the button, All LED will blink. The Power LED ⏻ will stay ON.

Note: If the all LED ⏻ did not blink, press Simple Connect again for ten seconds.



Step 3

Press Simple Connect Button for two seconds on the existing HomePlugAV Smartlink device. After you release the button, the Power LED ⏻ will continuously blink. If the Power LED ⏻ did not blink, press Simple Connect again for two seconds.

Make sure to press Simple Connect Button again on the HomePlugAV Smartlink Z within two minutes after you press Simple Connect from the existing network.

Existing HomePlug AV Network

Z

Step 4

To confirm if the connection was established, check the LEDs. The Power LEDs ⏻ and the Powerline Activity LEDs ⌂ on all HomePlugs are on.

HomePlugAV Network

If the Powerline Activity LED on HomePlug Z is off, this means the pairing was not successful. You need to repeat the process again.

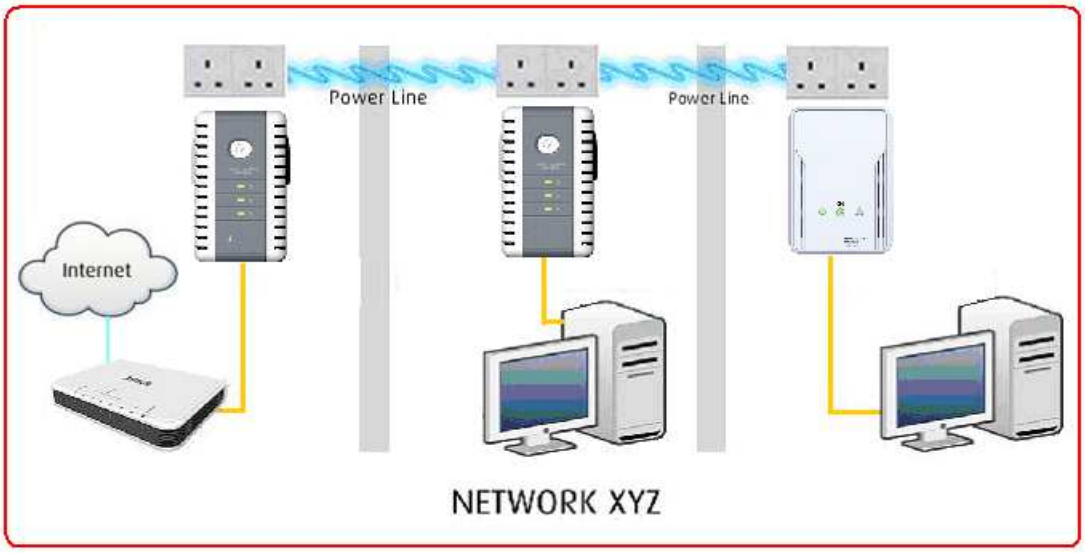
Existing HomePlug AV Network

Z

Step 5

Unplug HomePlug Z and then connect it to your Ethernet device using the Ethernet cables from the product package. After connecting the Ethernet cable, plug HomePlug Z directly to a wall outlet. An Ethernet-enabled device can be a router, computer, hub, gaming console, IP phone, network printer, or IP TV set-top box.

Note: HomePlugAV Smartlinks work best when connected directly to a wall socket. Avoid plugging it to a power strip or power extension. The other electrical devices in the power strip create noise that may affect the performance of the HomePlug.


Power Line
Power Line
Internet
NETWORK XYZ

Determining Connection Rate

Each LED color of the Powerline Activity represents a connection rating. The connection rating can only be calculated when the device is part of an existing network. The exact connection rate value can also be viewed using HomePlugAV Smartlink Utility.

Good (Red)

Connection rate is
less than 30 Mbps

Better (Amber)

Connection rate is
between 30 to 80 Mbps

Best (Green)

Connection rate is
more than 80 Mbps

Power Saving Mode

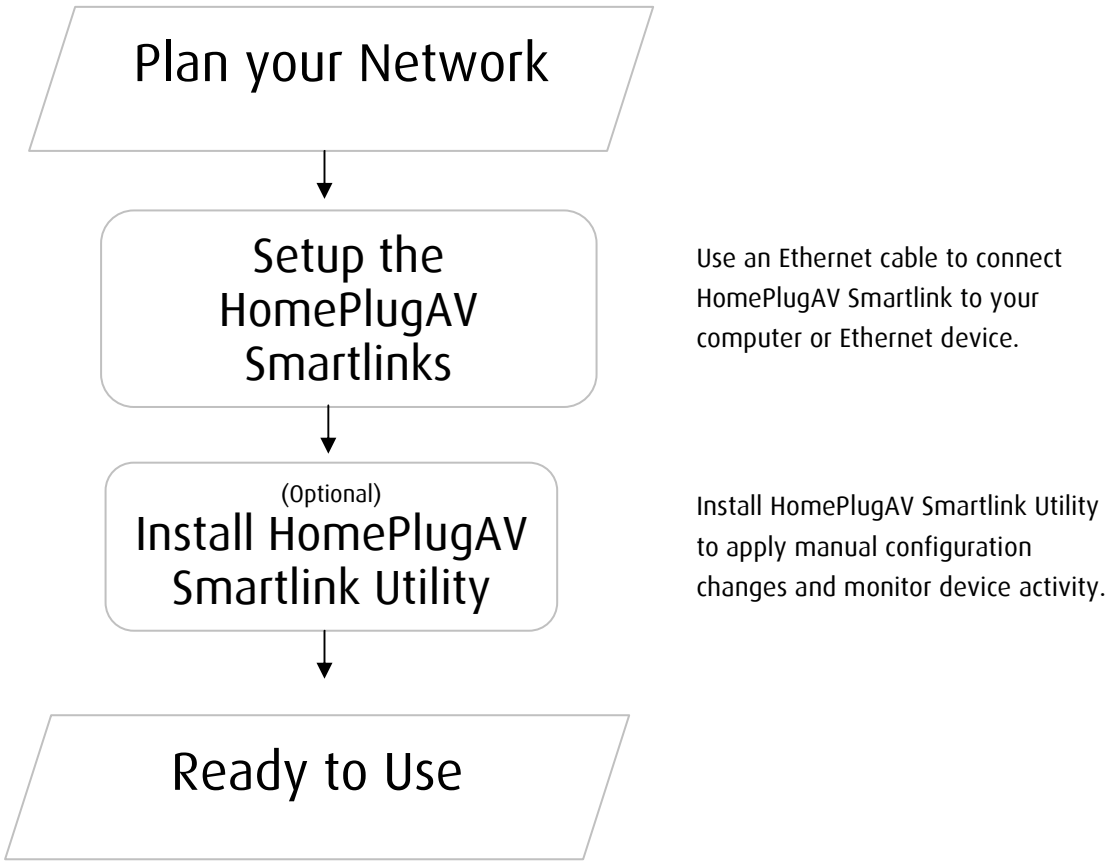
When Power LED blinks slowly in Green color HomePlugAV Smartlink is on a Power saving status.

Conditions for HomePlugAV Smartlink to go on a Power saving mode:

- Will go on a power saving mode after 15mins.
- There should be no Ethernet link.
- When connected to a PC or Laptop there should be no power on the network card when the computer is OFF.

Getting Started

Setting up the device is easy. The flowchart below provides an outline of the steps you need to complete the installation. There are brief descriptions beside each step to help you along. Detailed instructions are provided in the subsequent pages.

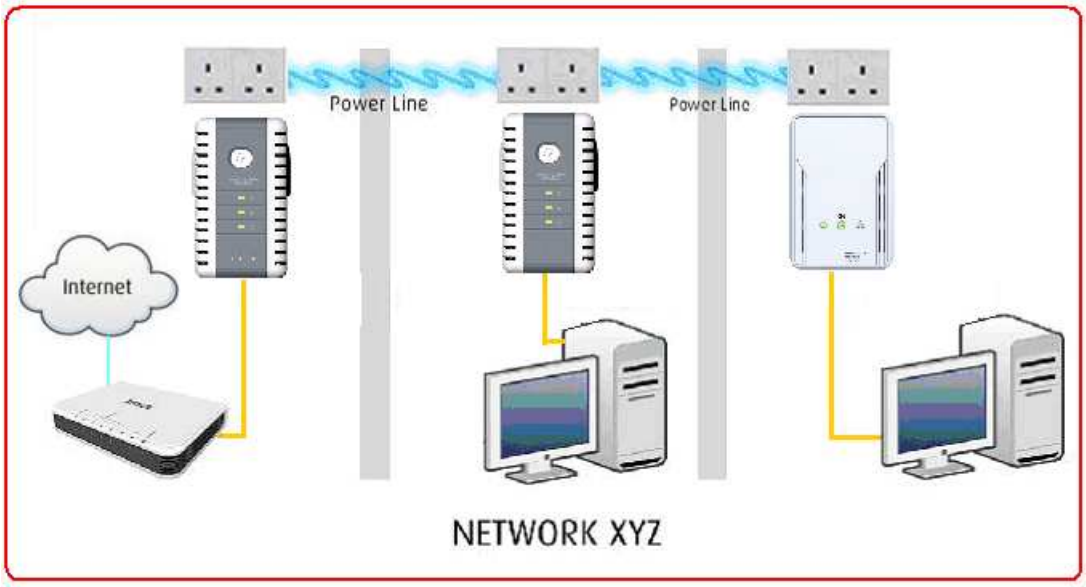

Plan your Network
Setup the HomePlugAV Smartlinks
Use an Ethernet cable to connect HomePlugAV Smartlink to your computer or Ethernet device.
(Optional)
Install HomePlugAV Smartlink Utility
Install HomePlugAV Smartlink Utility to apply manual configuration changes and monitor device activity.
Ready to Use

Plan Your Network

Here are ideas on how you can plan your HomePlugAV Smartlink network.

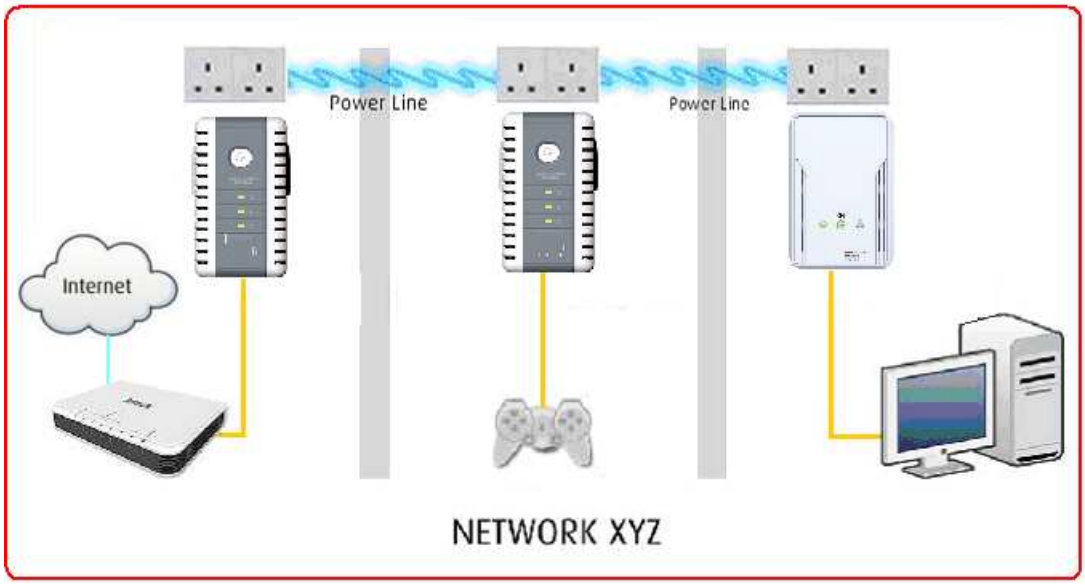
Local Network

Share ultra fast Internet connection with any computer wherever it is in the house.



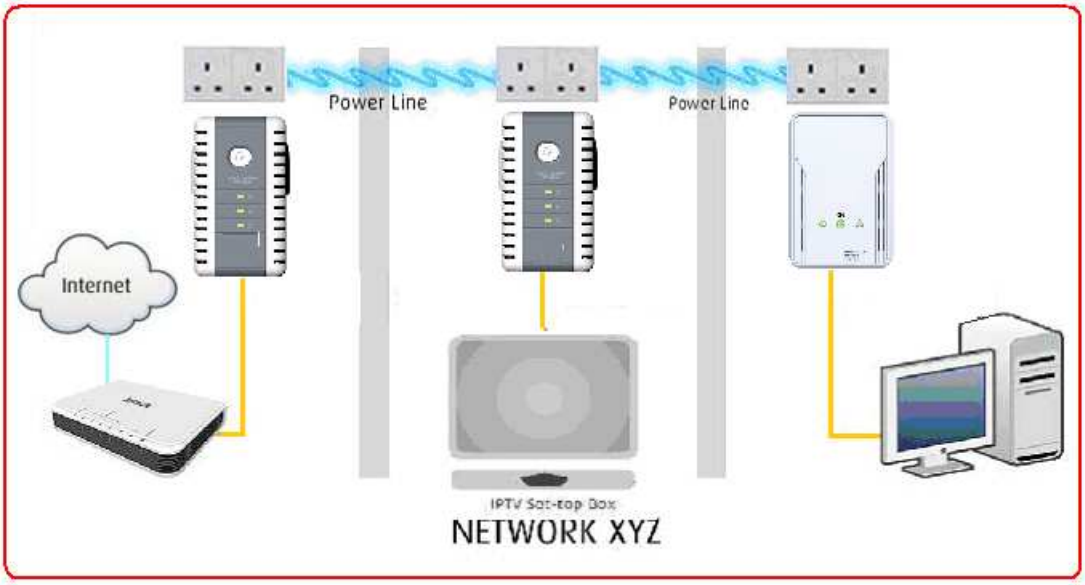
Gaming Network

Connect your gaming console to the Internet and compete with other online players.



Entertainment Network

Experience IP TV streaming into your home entertainment system.



Setup the HomePlugAV Smartlinks

For Twin Pack

HomePlugAV Smartlinks from a Twin Pack are preconfigured to have a common Private Network Name unique for that pair. All you need to do is connect the HomePlugAV Smartlinks to an Ethernet device and then plug it to a wall socket.

To setup a pair of HomePlugAV Smartlinks:

1. Plug one end of the Ethernet cable to your Ethernet device and then connect the other end to HomePlugAV Smartlink.
2. Connect the HomePlugAV Smartlink to a wall socket.
3. Plug one end of the Ethernet cable to your other Ethernet device and then connect the other end to HomePlugAV Smartlink.
4. Connect the HomePlugAV Smartlink to a wall socket.

For Single Pack

A HomePlugAV Smartlink from a single pack uses a random Private Network Name that prevents it from communicating with other HomePlugAV Smartlinks. To add it into an existing network, you need to use either the Simple Connect button or the HomePlugAV Smartlink Utility software to change the random Private Network Name to the Private Network Name being used by the existing HomePlugAV Smartlink network.

To add a HomePlugAV Smartlink to an existing network:

1. Plug one end of the Ethernet cable to your Ethernet device and then connect the other end to HomePlugAV Smartlink.
2. Connect the HomePlugAV Smartlink to a wall socket.
3. Add the new HomePlugAV Smartlink by using either Simple Connect or the HomePlugAV Smartlink Utility software. To use Simple Connect, please refer to Joining an Existing HomePlugAV Smartlink Network. To use HomePlugAV Smartlink Utility, please refer to Private Network Name.

About HomePlugAV Smartlink Utility

HomePlugAV Smartlink Utility is a software application that allows you to configure HomePlugAV Smartlink. It is mainly used for changing the Private Network Name, detecting other HomePlugAV Smartlink's in the network, and measuring the throughput of devices. Installation is straightforward and the user interface is easy to use.

Note: To use HomePlugAV Smartlink Utility, you need a computer using a Windows operating system with the .NET Framework installed. If you do not have .NET installed, the HomePlugAV Smartlink installer will installer it for you.

Requirements

Your computer must meet the following requirements:

- Windows XP (32 and 64 bit), or Vista (32 and 64 bit)
- 300 MHz Processor
- 128 Mb of RAM
- .NET Framework
- Windows Installer 3.1 for Windows XP (32 and 64 bit)
- Network Interface Card
- CD-ROM
- 128 Mb of free hard disk space

Installation

To install HomePlugAV Smartlink Utility:

1. Insert the Resource CD that comes with HomePlugAV Smartlink into the CD-ROM drive.
2. Click the Start button, and then click Run.
3. In the Run dialog box, type D:\Setup.exe (where D: is your CD-ROM drive), and then click OK.
4. Follow the instructions on the installation wizard.

   Two applications will be installed in your computer - HomePlugAV Smartlink Utility will be installed first followed by .NET Framework. The installer detects any version of .NET Framework in your computer. If .NET Framework is not installed, a dialog box opens to ask if you would like to install .NET Framework. Click Yes. The .NET Framework will not be installed if the required version is already in your computer.

Operating System	.NET Framework version to be installed
XP /Vista/Windows 7 32-bit	.NET Framework 3.5 SP 1 32-bit
XP /Vista/Windows 7 64-bit	.NET Framework 3.5 SP 1 64-bit

Opening HomePlugAV Smartlink Utility

Two ways to open HomePlugAV Smartlink Utility:

- Right-click the HomePlugAV Smartlink Utility desktop shortcut and then select Open.
- Click the Start button, click Programs, click HomePlugAV Smartlink, click HomePlugAV Smartlink Ethernet Adapter, and then click HomePlugAV Smartlink Utility.

The User Interface

The HomePlugAV Smartlink Utility user interface is divided into tabs. These tabs include:

- Home
- Private Network Name
- Quality of Service
- Devices
- Firmware Upgrade

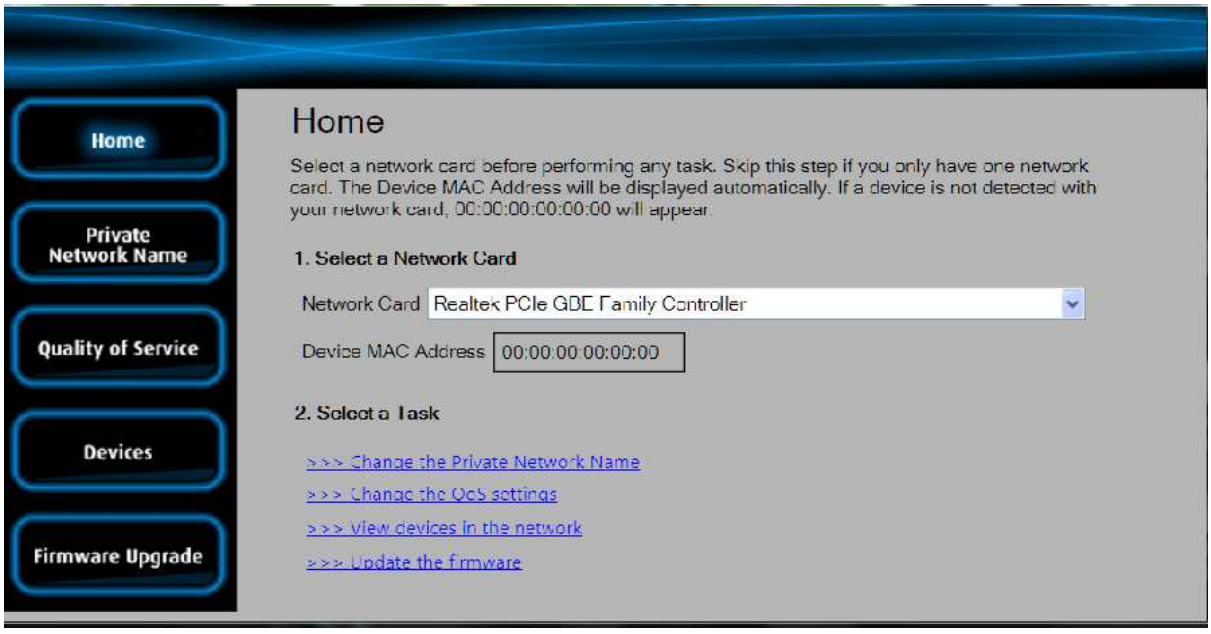
Home

Home provides a list of all the possible tasks you can perform in the HomePlugAV Smartlink Utility. To start a task, you first need to select the network card connected to your HomePlugAV Smartlink. This is most helpful when you have more than one network card in your computer. When you select a network card, the MAC Address of the HomePlugAV Smartlink connected to your computer appears. If there is no HomePlugAV Smartlink connected to your computer, no MAC address will appear.

After selecting the network card, there are four possible tasks you can perform. These tasks include:

- Change the Private Network Name
- Change the QoS settings
- View devices in the network
- Upgrade the firmware

When you select any task, you will be forwarded to the tab for the selected task.

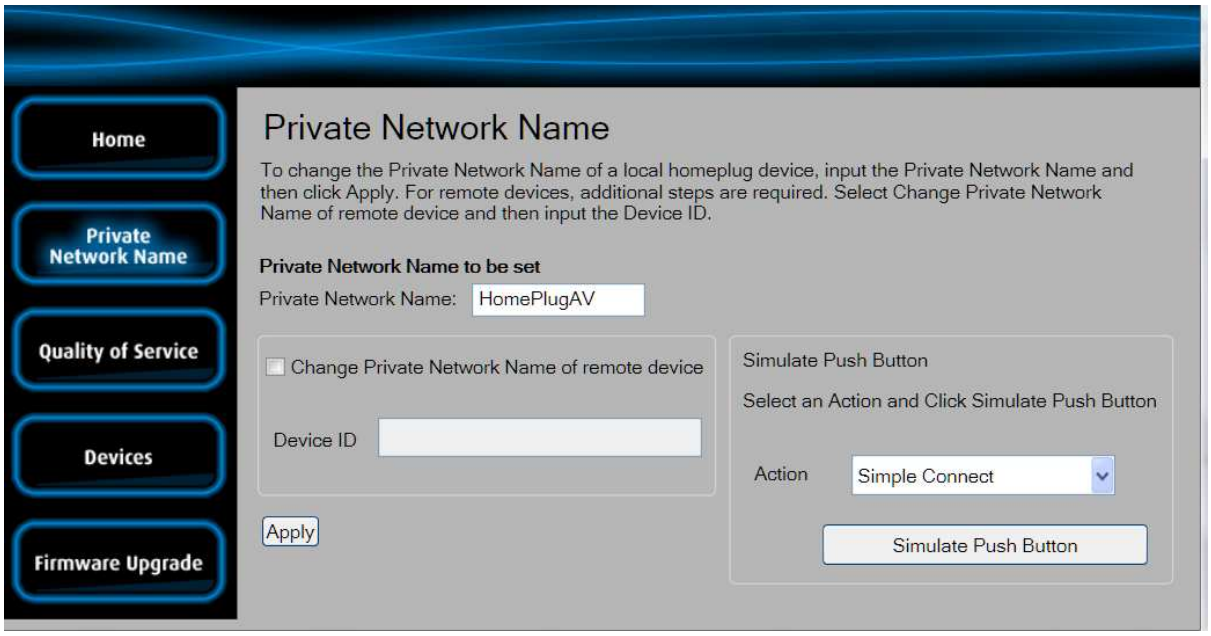

Home
Private Network Name
Quality of Service
Devices
Firmware Upgrade
Home
Select a network card before performing any task. Skip this step if you only have one network card. The Device MAC Address will be displayed automatically. If a device is not detected with your network card, 00:00:00:00:00:00 will appear.
1. Select a Network Card
Network Card
Realtek PCIe GBE Family Controller
Device MAC Address
00:00:00:00:00:00
2. Select a Task
>>> Change the Private Network Name
>>> Change the QoS settings
>>> View devices in the network
>>> Update the firmware

Home

Private Network Name

Private Network Name provides the function to manually change the Private Network Name of local and remote HomePlugAV Smartlinks. A Private Network Name is a string of 8 to 64 characters enables HomePlugAV Smartlink devices to communicate with each other.

If you intend to create multiple networks, you can assign different Private Network Names among your devices. You have to, however, make sure that at least two HomePlugAV Smartlinks have a similar Private Network Name. A HomePlugAV Smartlink that uses a unique or random Private Network Name will not be able to communicate with other devices.


Home
Private Network Name
Quality of Service
Devices
Firmware Upgrade
Private Network Name
To change the Private Network Name of a local homeplug device, input the Private Network Name and then click Apply. For remote devices, additional steps are required. Select Change Private Network Name of remote device and then input the Device ID.
Private Network Name to be set
Private Network Name: HomePlugAV
Change Private Network Name of remote device
Device ID
Apply
Simulate Push Button
Select an Action and Click Simulate Push Button
Action
Simple Connect
Simulate Push Button

Private Network Name

Note: In case you cannot connect into the network after changing the Private Network Name, please power cycle the device. To power cycle, disconnect and then reconnect HomePlugAV Smartlink from the power outlet.

Local Private Network Name

Local Private Network Name refers to the Private Network Name of the HomePlugAV Smartlink that is directly connected to the computer where you use HomePlugAV Smartlink Utility.

To change the local Private Network Name:

1. Open HomePlugAV Smartlink Utility.
2. Click Private Network Name.
3. Type the new Private Network Name. This field is case sensitive. It accepts 8 to 64 alphanumeric characters including punctuation marks but no spaces.
4. Click Apply. When the process is complete, the message Settings Applied appears.

Remote Private Network Name

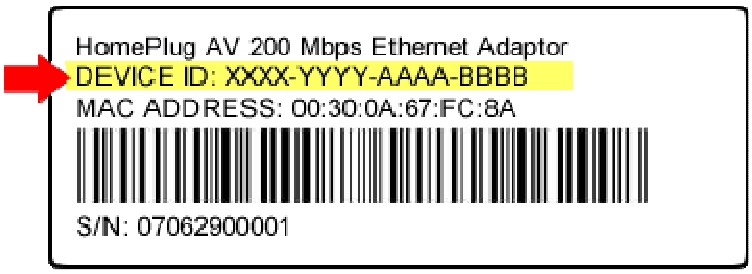
Without leaving your computer, you can change the Private Network Name of remote HomePlugAV Smartlink devices, provided they are using the same Private Network Name as your local HomePlugAV Smartlink. You cannot change the Private Network Name of remote devices that is not currently networked with your local HomePlugAV Smartlink.

Note: When changing the Private Network Name of remote devices, you will need the Device ID that appears on the label pasted on the device. It will be more helpful if you list down the Device ID of all your HomePlugAV Smartlinks to enable you to remotely change their settings using the HomePlugAV Smartlink Utility software.

To change the Private Network Name of a remote HomePlugAV Smartlink:

1. Open HomePlugAV Smartlink Utility.
2. Click Private Network Name.
3. Type the new Private Network Name. This field is case sensitive. It accepts 8 to 64 alphanumeric characters including punctuation marks but no spaces.
4. Select Change Private Network Name of remote device.

5. Type the Device ID of the remote device. The Device ID can be found on the label pasted on the device.



6. Click Apply. When the process is complete, the message Settings Applied appears.

   After changing the Private Network Name of the remote HomePlugAV Smartlink, it will no longer be able to communicate with your local HomePlugAV Smartlink, unless you use a similar Private Network Name for your local HomePlugAV Smartlink.

Simulate Simple Connect Button

Simulate Simple Connect Button allows you to apply functionalities without manually pressing the Simple Connect button on a HomePlugAV Smartlink device. However, this only works on local devices.

Simple Connect Select to search and pair with another device, or search and join an existing HomePlugAV Smartlink network.

NMK Randomize Select to reset to a random Private Network Name. A HomePlugAV Smartlink using a random Private Network Name will be disconnected from the HomePlug network and will not be able to communicate with other devices until it forms a new network or joins an existing network.

AVLN Status Displays the HomePlugAV Smartlink Logical Network membership status number.

Note: The Simulate Simple Connect Button functions from HomePlugAV Smartlink Utility can be used for HomePlugAV Smartlink versions with or without the Simple Connect button on the device.

To simulate a Simple Connect function:

1. Connect HomePlugAV Smartlink to your computer.
2. Select a Simulate Simple Connect Button action:
    a. Simple Connect
    b. PNN Randomize
    c. AVLN Status
3. Click Simulate Button Push.

Quality of Service

Quality of Service gives you the capability to prioritize particular applications within your network. QoS is not enabled by default.

Quality of Service

QoS Modes:

Online Game/Internet Prioritizes data streaming

Audio or Video Prioritizes data streaming multimedia streaming

Voice over IP Prioritizes voice applications

To enable QoS:

1. Open HomePlugAV Smartlink Utility.
2. Click Quality of Service.
3. Check Enable QoS.
4. Select a QoS mode.
5. Click Apply. When the process is complete, the message Settings Applied appears.

Devices

Devices displays information about remote HomePlugAV Smartlink's detected in the network. Only HomePlugAV Smartlinks using the same Private Network Name as the local HomePlugAV Smartlink will appear in the Remote Devices list.

Devices

Devices displays the following information:

TEI Displays the Terminal Equipment Identifier.

Device MAC address Displays the HomePlugAV Smartlink MAC Address.

Bridge MAC Address Displays the MAC Address of the Ethernet network adapter connected to the HomePlugAV Smartlink.

Connection Rate Displays the Transmit and Receive connection rates.

Firmware Upgrade

Use Firmware Upgrade to upgrade firmware of HomePlugAV Smartlink. After upgrading the firmware, HomePlugAV Smartlink will still retain the same Private Network Name and MAC address settings. Before you proceed with the upgrade, you need to have both the configuration file (PIB extension) and the firmware file (NVM extension). You can download upgrade files from the product's Web site.

Home
Private Network Name
Quality of Service
Devices
Firmware Upgrade
Firmware Upgrade
Click the Upgrade button to perform a firmware upgrade. You will be required to select the Config and Firmware files. Current Firmware displays the firmware version of the device.
Current Firmware
Upgrade
Factory Defaults
Click to reset to factory settings

Firmware Upgrade

To upgrade the firmware of a HomePlugAV Smartlink:

1. Connect HomePlugAV Smartlink to the computer where you are using HomePlugAV Smartlink Utility.
2. Open HomePlugAV Smartlink Utility.
3. Click Firmware Upgrade.
4. Click Browse to select the location of the configuration and firmware files. The configuration file has a PIB extension while the firmware file has an NVM extension. After you select the location of the configuration and firmware files, the upgrade will immediately start.

To reset to factory default:

1. Connect HomePlugAV Smartlink to the computer where you are using HomePlugAV Smartlink Utility.
2. Open HomePlugAV Smartlink Utility.
3. Click Factory Default.

Note: You can also perform a reset to the factory default when you press the RESET button on the device for 2 seconds.

Appendix

Frequently Asked Questions

Can I use HomePlugAV Smartlink with older HomePlug versions?

All HomePlugAV Smartlink versions can communicate with each other. HomePlugAV Smartlink, however, is not backward compatible with HomePlug 1.0 releases.

If you will use different versions of HomePlugAV Smartlink in a single network, you need to use the HomePlugAV Smartlink Utility software to create a Private Network Name for all devices. Unlike the new version of HomePlugAV Smartlink, older versions do not feature the Simple Connect button, which enables the device to create a common Private Network Name without using the software.

How does HomePlugAV Smartlink achieve a higher bandwidth than HomePlug Turbo and HomePlug 1.0 devices?

HomePlugAV Smartlink complies with the HomePlugAV Smartlink standard. It achieves higher data throughput by using a broader frequency spectrum (2-30 MHz rather than 4-21 MHz), by using a better access method (Time Division Multiple Access rather than Carrier Sense Multiple Access/Collision Detection), and by using a better processor with a greater bitload per Hz.

Can HomePlugAV Smartlink be used alongside HomePlug 1.0 devices within the network?

HomePlug 1.0 and HomePlugAV Smartlink standards can coexist but they will not be able to communicate with each other.

Which operating system (OS) is compatible with HomePlugAV Smartlink?

HomePlugAV Smartlink is operating system independent. However, the HomePlugAV Smartlink Utility requires a Windows operating system (XP/Vista/Windows 7) with the .NET Framework 3.5 SP 1 installed.

How difficult is it to set up a network with HomePlugAV Smartlink?

HomePlugAV Smartlink is a plug and play device. Connect it to an Ethernet device, plug it to a wall socket, and it is ready to use. Even the most inexperienced user can set up the

network with ease. Installing the HomePlugAV Smartlink Utility software is only needed if you intend to manually change the Private Network Name or view the connection rate.

How many devices do I need to create a HomePlugAV Smartlink network?

At least two devices are needed to create a HomePlugAV Smartlink network.

Is HomePlugAV Smartlink suitable for triple play like the simultaneous use of data, voice, and video applications?

Yes, triple play is supported.

What data transfer rates do I need for high definition TV?

A variety of HDTV resolutions are available. The following are the most common resolutions opposite the required transfer rate:

- 720p, mpeg2: 09-10 Mbps
- 720p, mpeg4: 06-08 Mbps
- 1080i, mpeg2: 12-15 Mbps
- 1080i, mpeg4: 08-10 Mbps

Does HomePlugAV Smartlink have a security mechanism?

Yes. HomePlugAV Smartlink uses 128-bit AES encryption.

Are Gigabit Ethernet adapters required for use with HomePlugAV Smartlink?

No. Under ideal conditions, HomePlugAV Smartlink has a physical gross data rate of up to 200 Mbps. The effective net data rate is somewhat lower. A 100 Mbps Ethernet adapter is therefore adequate in most cases.

Does the technology support multicast video server streams (IP-TV)?

Yes.

Do I need an Automatic Voltage Regulator (AVR) for HomePlugAV Smartlink?

No. HomePlugAV Smartlink can operate in an environment using 100-240V.

What is the maximum range of HomePlugAV Smartlink?

The maximum range is 200 meters.

If one HomePlugAV Smartlink is connected to a LAN switch, is it possible for other computers in the switch to communicate with other HomePlugAV Smartlink devices?

Yes.

Can my neighbors access my HomePlugAV Smartlink network?

Your electric meter prevents any signal from going outside your household. However, we strongly suggest that you create your own personalized Private Network Name to prevent unauthorized access into your network.

Can I use HomePlugAV Smartlink to connect computers located in different floors of the building?

Yes, as long as the electric wires are connected and do not exceed 200 meters.

Can I use HomePlugAV Smartlink in an old house with old power supply lines (partly without separated ground wire)?

Yes. However, performance may be affected because of the quality of the wires.

Can I plug HomePlugAV Smartlink into a multiple socket switch or do I have to plug it directly to the wall socket?

You can plug HomePlugAV Smartlink into a multiple socket switch. However, we strongly advise to plug it directly to a wall socket to achieve optimal performance.

Do I need electrical grounding for the device?

HomePlugAV Smartlink does not require electrical grounding.

After a blackout, will HomePlugAV Smartlink switch on automatically?

Yes. If you experience connection issues, unplug the device and plug it back.

What will happen if I connect two HomePlugAV Smartlinks to the same router?

This will cause collision and slow down the network traffic. To prevent collision, you need to assign different Private Network Names on each HomePlugAV Smartlink.

FCC Statement

This equipment has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

European Regulations

The product has been designed, tested and manufactured according to the European R&TTE directive 1999/5/EC.

CE 1313 !

⚠ Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions.

- Do not open the device. Opening or removing the device cover can expose you to dangerous high voltage points or other risks. Only qualified service personnel can service the device. Please contact your vendor for further information.
- Do not use your device during a thunderstorm. There may be a risk of electric shock brought about by lightning.
- Do not expose your device to dust or corrosive liquids.
- Do not use this product near water sources.
- Make sure to connect the cables to the correct ports.
- Do not obstruct the ventilation slots on the device.